

**CLAIMS**

- 1           1.     A method of creating an application comprising;  
2                 providing a set of predetermined rules for processing data;  
3                 creating at least one node, each created node being capable of receiving  
4                         data and further being capable of processing that data within the  
5                         node according to the set of predetermined rules and making an  
6                         output;  
7                 creating a specification that defines how the or each node interacts with  
8                         other nodes and defines resources useable by the nodes; and  
9                 providing a run time environment that interconnects the or each node  
10                         according to the specification such that data input to the  
11                         application is processed by at least one of the nodes and, if  
12                         further processing is required, forwarded to other nodes for that  
13                         further processing.
- 1           2.     A method according to claim 1 in which a plurality of nodes are  
2     created.
- 1           3.     A method according to claim 1 which further comprises providing a  
2     library of nodes containing at least one node and selecting at least one of the nodes  
3     from the library of nodes.
- 1           4.     A method according to claim 1 which further comprises arranging  
2     the or each node to comprise a plurality of layers, each layer being arranged to  
3     perform a predetermined function.

1           5.     A method according to claim 4 which further comprises arranging  
2 the layers of the nodes to be interchangeable and wherein altering at least one of  
3 the layers can change the overall functionality of a node.

1           6.     A method according to claim 4 which further comprises providing a  
2 library of layers containing at least one layer and selecting at least one layer from  
3 the library of layers.

1           7.     A method according to claim 4 which comprises arranging at least  
2 one of the layers of a node to act as a transport layer arranged to receive and send  
3 data to and from the node.

1           8.     A method according to claim 4 which comprises arranging at least  
2 one of the layers of a node to act as a message transceiver arranged to send and  
3 receive messages to other nodes to which that node is connected.

1           9.     A method according to claim 8 in which the at least one node has an  
2 identity and in which the application is arranged to be run and, at runtime, as  
3 nodes are connected together, the method further comprising arranging the  
4 message transceiver layer of a node to discover the identity of nodes to which it is  
5 connected at runtime.

1           10.    A method according to claim 4 which comprises arranging at least  
2 one of the layers of a node to act as a rule processing engine arranged to apply the  
3 predetermined rules to data that the node receives.

1           11.    A method according to claim 10 in which the rule processing engine  
2 layer of a node is arranged to use forward chaining rule logic.

- 1           12.    A method according to claim 10 which comprises providing a rule  
2   set of at least one rule in a file that is used by the rule processing engine.
- 1           13.    A method according to claim 12, which comprises specifying the file  
2   in which the rules are located by a link.
- 1           14.    A method according to claim 10 which comprises defining each rule  
2   set that is to be used by the application in the specification.
- 1           15.    A method according to claim 1 which comprises defining at least  
2   one predetermined message that can be passed between the nodes.
- 1           16.    A method according to claim 15 which comprises defining the  
2   messages that are to be used by the application in the specification.
- 1           17.    A method according to claim 15 which comprises writing the  
2   messages in a flat text format, which may be any of the following: ASCII, XML,  
3   EDI (Electronic Data Interchange).
- 1           18.    A method according to claim 15 which comprises processing the at  
2   least one predetermined messages within a node using the predetermined rules.
- 1           19.    A method according to claim 18 in which the predetermined rules  
2   are arranged to be triggered and which comprises triggering rules only if the at  
3   least one predetermined message contains predetermined trigger data.
- 1           20.    A method according to claim 1 which comprises providing a pattern,  
2   arranging the at least one node within the pattern and defining how nodes therein  
3   interact with one another.

1           21.    A method according to claim 20, which comprises providing a  
2   library of patterns containing at least one pattern that can be used in creating an  
3   application.

1           22.    A method according to claim 1 in which the specification is arranged  
2   to determine at least one of the following: which nodes are to be used; which  
3   nodes interact with one another; which patterns are to be used; which assets are to  
4   be used.

1           23.    A method according to claim 1 which comprises providing files  
2   arranged to define the application specified therein, arranging the specification to  
3   be capable of deploying files and using the specification to deploy the files.

1           24.    A method according to claim 23 which comprises arranging the files  
2   specifying the application to be XML files.

1           25.    A method according to claim 1 in which the data processed by the  
2   application is specified in an XML file.

1           26.    A method according to claim 1 in which data processed by the  
2   application is specified in an image file.

1           27.    A method according to claim 1 in which data processed by the  
2   application is specified in a flat text file such as an ASCII file, a raw text file, and  
3   EDI file.

1           28.    A method according to claim 1 which comprises providing a  
2   graphical tool arranged to enable a user to specify components of the application.

1           29.    A method according to claim 28 which comprises providing a library  
2   of at least one of the following: nodes; node layers; specification; patterns;  
3   messages; rule sets; style sheets; schemas and in which the graphical tool allows a  
4   user to select components from one of said libraries.

1           30.    A method according to claim 29 which allows a user to define  
2   further libraries.

1           31.    A method according to claim 28 which comprises providing at least  
2   one pattern arranged to define how nodes interact arranging the at least one pattern  
3   such that it is capable of interacting with at least one other pattern and arranging  
4   the graphical tool to allow a user to specify how the patterns and nodes interact  
5   with one another.

1           32.    A method according to claim 28 which comprises using the  
2   graphical tool to perform at least one of the following: create the specification;  
3   edit the specification.

1           33.    A method according to claim 28 which comprises using the  
2   graphical tool to manipulate any components of the specification.

1           34.    A method according to claim 1 which comprises creating and  
2   deploying files and processing the files in the run time environment.

1           35.    A method according to claim 1 in which at least one node is  
2   provided to provide an output from the application.

1           36.    A computer system arranged to create an application; said system  
2   comprising a node creation means arranged to create a definition specifying at

3 least one node, each node being capable of processing data according to a set of  
4 predetermined rules and generating an output therefrom, the system further  
5 comprising a linking means capable of connecting at least two nodes such that  
6 data can pass between the nodes and being arranged to interact with the node  
7 creation means to modify the definition, a deployment means arranged to deploy  
8 the application from the definition created by the node creation means and the  
9 linking means, and a specification means arranged to define a specification of how  
10 the application is deployed wherein the deployment means deploys the application  
11 according to the specification defined by the specification means.

1 37. A computer system according to claim 36 which comprises at least  
2 one processor arranged to process data, including the definition, and on which the  
3 definition created by the node creation means and modified by the linking means  
4 is processed.

1 38. A computer system according to claim 37 which comprises at least  
2 one processing apparatus comprising the at least one processor and in which the  
3 linking means is arranged to connect nodes running on the processor within the  
4 processing apparatus.

1 39. A computer system according to claim 38 which comprises a  
2 plurality of processors, each remote from the other and having a connecting means  
3 therebetween capable of transmitting data between the processors.

1 40. A computer system according to claim 39 in which each of the  
2 processors is provided on a separate processing apparatus.

1 41. A computer system according to claim 39 in which the linking  
2 means is arranged to connect nodes provided on processors remote from one  
3 another.

1           42.    A computer system according to claim 36 in which the deployment  
2 means deploys the definition that causes the nodes to communicate with one  
3 another using one of HTTP and direct memory protocols.

1           43.    A computer system according to claim 36 in which the node creation  
2 means is arranged to utilise at least one of the following: predetermined definitions  
3 and pre-written definitions.

1           44.    A computer system according to claim 43 in which the pre-written  
2 definition is provided in at least one library.

1           45.    A computer system according to claim 36 which further comprises a  
2 pattern creation means arranged to create at least one pattern of nodes.

1           46.    A computer system according to claim 36 which further comprises a  
2 pattern cloning means arranged to clone a pattern of nodes.

1           47.    A computer system according to claim 36 which further comprises a  
2 rule creation means arranged to allow predetermined rules to be created and  
3 edited.

1           48.    A computer system according to claim 36 which further comprises at  
2 least one of the following: a node storage means; a pattern storage means; a rule  
3 storage means.

1           49.    A machine readable medium containing instructions which when  
2 read onto a computer cause that computer to perform the method of claim 1.

1           50.    A machine readable medium containing instructions which when  
2 read onto a computer cause that computer to function as the computer system  
3 according to claim 36.

1           51.    A data-structure comprising a plurality of XML files, said XML files  
2 comprising a specification file and a plurality of asset files, the asset files being  
3 capable of interacting with one another and the specification file determining how  
4 the asset files interact with one another to provide an application.

1           52.    A machine readable medium containing instructions provide the data  
2 structure according to claim 51.

1           53.    A method of implementing an application comprising:  
2           creating a plurality of nodes and predetermined rules, each node being  
3           capable of receiving data, processing that data according to a set  
4           of predetermined rules and making an output;  
5           interconnecting the plurality of nodes such that data input to the  
6           application is processed by at least one of the nodes and if further  
7           processing is required, forwarded to other nodes for that further  
8           processing.

1           54.    A method of creating an application defined in software, the method  
2 comprising providing an XML file defining a specification and providing at least  
3 one node defined by an XML file arranged to be capable of interacting with other  
4 nodes according to the specification in order to process data to provide the  
5 application.

1           55.    The method according to claim 54 which comprises providing the  
2 nodes as separate XML files.



1           56.    A machine readable medium containing instructions which when  
2 read onto a computer cause that computer to provide the method of claim 54.

1           57.    A computer system comprising a memory and processing means  
2 arranged to process instructions held in the memory wherein the memory is  
3 arranged to hold files containing data, at least one of the files defining a  
4 specification, at least one of the files defining a node capable of processing data,  
5 and at least one of the files providing logic defining how the or each node should  
6 function, the specification being arranged to define how that node should process  
7 data.

1           58.    A method of creating an application comprising;  
2           providing a set of predetermined rules for processing data;  
3           creating a plurality of nodes, each node being capable of receiving data  
4           and further being capable of processing that data within the node  
5           according to the set of predetermined rules and making an  
6           output;  
7           each node comprising a plurality of layers, each layer being arranged to  
8           perform a predetermined function  
9           creating a specification that defines how the nodes interact with one  
10          another and defines resources useable by the nodes;  
11          arranging at least one of the layers of a node to act as a message  
12          transceiver arranged to send and receive messages to other nodes  
13          to which that node is connected;  
14          providing a run time environment that interconnects the nodes according  
15          to the specification such that data input to the application is  
16          processed by at least one of the nodes and, if further processing is

17                   required, forwarded to other nodes using the message transceiver  
18                   layer for that further processing.

1           59.   A computer system arranged to create an application; said system  
2   comprising a processor programmed to create a definition specifying at least one  
3   node, each node being capable of processing data according to a set of  
4   predetermined rules and generating an output therefrom, the processor being  
5   further programmed to create a definition to link at least two nodes such that data  
6   can pass between the nodes, the processor being further arranged to deploy the  
7   application from the definitions created specifying the at least one node and the  
8   definition linking the at least two nodes, and the processor being further  
9   programmed to provide a specification as to how nodes should interact.

1           60.   A processing apparatus having a processor and memory the memory  
2   containing both program code and data wherein the program code and the data are  
3   substantially written in XML.

1           61.   An apparatus according to claim 60 in which the memory holds  
2   presentation data specifying how output from the apparatus should be presented,  
3   the presentation data being held in the same format as the program code and the  
4   data.